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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,290	11/12/2003	Sehat Sutardja	MP0185.D1	9295
23624	7590	10/14/2004	EXAMINER	
MARVELL SEMICONDUCTOR, INC. INTELLECTUAL PROPERTY DEPARTMENT 700 FIRST AVENUE, MS# 509 SUNNYVALE, CA 94089			NGUYEN, MATTHEW VAN	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,290

Applicant(s)

SUTARDJA ET AL.

Examiner

MATTHEW V NGUYEN

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 24-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 24-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2-9-04</u> | 6) <input type="checkbox"/> Other: _____ |

1. The disclosure should be carefully reviewed and ensure that any and all grammatical, idiomatic, and spelling or other minor errors are corrected.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 9-12, 24-28, 31-39 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui et al. (U.S. Pat. No. 6,115,266).

With regard to claims 1-5, 9-12, 24-28, 31-39 and 42-45, Matsui et al. (Fig. 1) shows an output regulator for converting an input voltage to a regulated output and a method therefor comprising a power stage for generating a power output (OUT1, OUT2) from the input voltage (IN1, IN2), an output filter (50) for filtering the power output, an output sensor (60) for generating a digital sense signal (AS2), a digital controller (70) responsive to the digital sense signal for generating a drive signal to control the regulated output.

Matsui et al. does not disclose at least three reference ranges. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have at least three reference ranges (instead of one reference range), since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

4. Claims 6-8, 29, 30, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui et al. in view of Hirst (U.S. Pat. No. 5,789,723).

With regard to claims 6-8, 29, 30, 40 and 41, Matsui et al. shows an output regulator for converting an input voltage to a regulated output and a method therefor comprising all the claimed subject matter as discussed above, except for a duty cycle estimation. Hirst discloses an electrical power control system in which the duty cycle estimation is included (col. 28, lines 16-17). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the duty cycle estimation as shown in Hirst into the output regulator of Matsui et al. for the purpose of enhancing the power efficiency of the system.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nowell (U.S. Pat. No. 4,323,958), Hotta et al. (U.S. Pat. No. 4,803,440), Drees et al. (U.S. Pat. No. 5,867,384) and Keane et al. (U.S. Pat. No. 6,555,994) also disclose control systems for an output regulator, each of which comprises substantial elements as recited in the claims of the instant application.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew V. Nguyen whose telephone number is (571) 272-2081.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2800.

Matthew V. Nguyen
MATTHEW V. NGUYEN
PRIMARY EXAMINER